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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/804,698 | 03/19/2004 | B. Ryland Wiggs | N9302 | 9146 |

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WADDEY & PATTERSON, P.C.
1600 DIVISION STREET, SUITE 500
NASHVILLE, TN 37203

EXAMINER

MCCRAW, BARRY CLAYTON

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| ART UNIT | PAPER NUMBER |
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3744

DATE MAILED: 09/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/804,698

Applicant(s)

WIGGS, B. RYLAND

Examiner

B. Clayton McCraw

Art Unit

3744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-76 is/are pending in the application.
- 4a) Of the above claim(s) 1-12, 18-45 and 51-76 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-17 and 46-50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 7/12/2004.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Claims 1-12, 18-45, and 51-76 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 9/7/2006.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 13-17 and 46-50 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "system operational working pressures" in claims 13 and 46 is a relative term which renders the claim indefinite. The term "system operational working pressures" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Specifically, a system's operational working pressure is not simply a function of the refrigerant used in the system, as the claim insinuates, but rather, also a function of many other aspects of the system itself.

Regarding claims 17 and 50, the phrase "oversized by a factor of at least 10% above the size of a filter dryer used in an R-22 based system" is a relative term which renders the claim indefinite. The term "oversized by a factor of at least 10% above the

size of a filter dryer used in an R-22 based system" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Specifically, there is no specific size of filter dryer used in various R-22 based systems, thus it is unclear exactly to what size the applicant is referring.

4. Claim 16 recites the limitation "the system's compressor" in line 2. There is insufficient antecedent basis for this limitation in the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 46-48 are rejected under 35 U.S.C. 102(b) as being anticipated by Schuster (US 6,354,097). Schuster explicitly teaches the method and apparatus of providing a refrigerant with system operational working pressures at least 33% greater than the system operational working pressures of R-22 (col. 1, lines 21-32), a system components designed to withstand greater system operational working pressures (col. 4, lines 23-28), and a system providing an R-410A refrigerant (col. 4, lines 23-28).

It should be noted that the phrase "a direct expansion geothermal heat exchange system" of claims 13 and 46, is part of the preamble and does not significantly add to the meets and bounds of the claim and is therefore given limited patentable weight.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schuster (US 6,354,097) in view of Wiggs (US 5,946,928). Schuster teaches the elements of the present invention as described above, but fails to teach a direct expansion geothermal heat exchange system. Wiggs teaches a direct expansion geothermal heat exchange system (Figure 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the refrigerant

and working pressures of Schuster with the heat exchange system of Wiggs since the refrigerant advantageously assists in effecting heat transfer (col. 1, lines 26-29).

10. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schuster (US 6,354,097) in view of Wiggs (US 5,946,928) in further view of Komatsubara et al. (US 2002/0194862). Schuster and Wiggs teach the elements of the present invention as described above, but fail to teach providing polyol ester lubricating oil for the system's compressor. Komatsubara et al. explicitly teach providing polyol ester lubricating oil for a system's compressor (paragraph 0037). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the refrigeration system and working pressures of Shuster and Wiggs with the lubricating oil of Komatsubara et al. since polyol ester is an environmentally safe lubricating oil that would prevent seizing of the system compressor.

11. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schuster (US 6,354,097) in view of Komatsubara et al. (US 2002/0194862). Schuster teaches the elements of the present invention as described above, but fails to teach providing polyol ester lubricating oil for the system's compressor. Komatsubara et al. explicitly teach providing polyol ester lubricating oil for a system's compressor (paragraph 0037). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the refrigeration system and working pressures of Shuster with the lubricating oil of Komatsubara et al. since polyol ester is an environmentally safe lubricating oil that would prevent seizing of the system compressor.

12. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schuster (US 6,354,097) in view of Wiggs (US 5,946,928) and in further view of Smolinsky (US 6,227,003). Schuster and Wiggs explicitly teaches the elements of the present invention as described above, but fails to teach a filter dryer. Smolinsky explicitly teaches a filter dryer (60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the refrigeration system and working pressures of Schuster and Wiggs with the filter dryer of Smolinsky since a filter dryer advantageously removes moisture and contaminants from refrigeration systems (col. 5, line 44).

Regarding the phrase "oversized by a factor of at least 10% above the size of filter dryer used in an R-22 based system" of lines 2-3, it would have been obvious to provide a larger filter dryer since the system is operating under increased working pressures and system components must be adapted to accommodate this.

13. Claims 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schuster (US 6,354,097) in view of Smolinsky (US 6,227,003). Schuster explicitly teaches the elements of the present invention as described above, but fails to teach a filter dryer. Smolinsky explicitly teaches a filter dryer (60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the refrigeration system and working pressures of Schuster with the filter dryer of Smolinsky since a filter dryer advantageously removes moisture and contaminants from refrigeration systems (col. 5, line 44).

Regarding the phrase "oversized by a factor of at least 10% above the size of filter dryer used in an R-22 based system" of lines 2-3, it would have been obvious to

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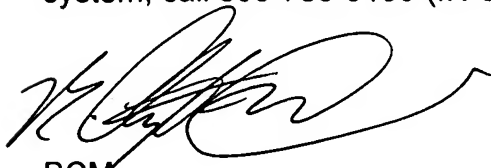
provide a larger filter dryer since the system is operating under increased working pressures and system components must be adapted to accommodate this.

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to B. Clayton McCraw whose telephone number is (571) 272-3665. The examiner can normally be reached on M-F 8:30AM-5:00PM.

15. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on (571) 272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

16. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


BCM
9/11/2006


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